

# QUANTA

**VOLUME 3 ISSUE 4**

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### INFORMATION ON THE GROUP

Membership of QUANTA (QL Users and Tinkerers Association) is by subscription to QUANTA, the group's newsletter, which is published monthly. Membership details are obtainable from the secretary. Membership of the group is open to anyone with an interest in the Sinclair QL microcomputer.

Members requiring assistance with problems related to the QL may write to or phone the secretary. An attempt will be made to put them in touch with a member who can help with the problem.

Workshops will be arranged from time to time in various parts of the country.

The group maintains a software library. Most of the programmes are free to members. A library list will be published from time to time. Programmes are obtainable from the sub-librarians.

A list of members in any particular area is obtainable from the secretary.

Please send all contributions to the newsletter to the editor.

Chairman and  
Newsletter Editor

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### NOTES FOR CONTRIBUTORS TO QUANTA

QUILL files on Microdrive cartridge or 40 track 5 1/4" disk (single or double sided), or 3 1/2" disk are preferred. Cartridges and disks will be returned ASAP. Printed or handwritten material is acceptable, of course.

Short programmes can be included, but lengthy programmes should be placed in the library, and a description sent in for the newsletter.

### EDITORIAL

I am afraid that it appears as if the QL as we know it is probably dead, in that Amstrad has sold the entire stock of QLs, as well as the older 48K Spectrums, to an export company, who will probably sell them into foreign markets. Some of these QLs will probably be available in the UK (I picked one up the other day at a very low price, to keep as a spare). It is unlikely that any more will be made in the UK, although Samsung, in South Korea, will supply their version of the machine to anyone who orders it in large quantities (over 5000 at a time).

However, it could be said that "the QL is dead, long live the QL", as two new machines have risen "phoenix-like" from the ashes of the old QL.

CST have developed a machine called "Thor", launched at the recent ZX Microfair, which contains a QL board, in a low-profile case, with 512K expansion RAM, parallel printer port, single or dual 3 1/2" disk drives, optional hard disk, with a separate IBM PC style keyboard. The full PSION Xchange suite will probably be an optional extra. The basic system will cost about £550 plus VAT, and there will be a new version with the 68020 32-bit processor, before very long. An allowance will be made for your old QL, which will presumably be recycled. CST are already accepting orders for the Thor.

Tony Tebby is designing a machine which will be called the "QLT", for QuaLiTy, which will use a full 68000 processor with 512K RAM (expandable to 4 Mbytes), single 3 1/2" floppy, hard disk interface, enhanced QDOS-compatible operating system, enhanced BASIC (with COMAL extensions) enhanced graphics, proper sound, separate quality keyboard, buffered expansion bus (for I/O, second processors, etc.), parallel printer port, proper asynchronous serial port, networking and a high speed synchronous serial port for low-cost connection of peripheral devices. Space for a second floppy or a hard disk is available in the case. All existing software should run on the QLT, and the full PSION Xchange package will be an optional extra. Several companies involved with the QL are financing the construction of a prototype, to be built by QJump, Tony's company, and several people involved with the development of the original QL will be working on the new machine which will sell for £500. Tony hopes to have the prototype ready within a few weeks.

QUANTA will be supporting both these ventures, which should ensure continued support in terms of software development for our QLs as well as for the new machines, which will of course be compatible. Even if you get one of the new Thor or QLT machines, your existing systems won't be obsolete, as they can be networked together. The next few months should be quite exciting.

The May ZX Microfair seemed much busier than the previous one, in spite of being held on the same day as millions of people were watching 22 men kicking a football around. We got a reasonable number of new members, and it was nice to meet many of the existing membership who came along.

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To make the distribution of review software fairer, would those members who are willing to help please send me a note, with your name and address, and the type of software you are willing to review.

Members with amateur radio licences might be interested in joining SARUG (the Sinclair Amateur Radio User Group). They publish an informative newsletter, and have some QL software for amateur radio applications in their library. Contact:-

Paul Newman, G4 INF,  
3, Red House Lane,  
Leiston,  
Suffolk IP16 4JZ.

for further details.

Medic has now been formally "wound-up" in the High Court, and a creditors meeting will have been held by the time you get this issue. EMAP have been in touch with several members who have submitted claims under their Mail Order Protection Scheme, in connection with orders placed on Medic, in response to adverts. in QL User. Apparently they have £6,850 to pay out, but claims total £31,000, so each claimant will only get a small proportion of the money they are owed by Medic. I think it will be best to accept the money from EMAP, rather than claim via the Official Receiver, as the latter will probably have virtually nothing to give out; I understand that the company had virtually no assets to be liquidated.

Leon Heller

#### **MEMBERS' LETTERS**

QUANTA is being successfully pirated here in Yugoslavia. That's the way I got last years issues.

In countries where you've got to work at least 500 hours to get a QL, this machine with its power to money ratio seems to have a future, especially after DIY upgrades.

Petric Zeljko,  
78250 Laktasi,  
Post Restante,  
Yugoslavia.

/\* There's not much we can do about pirating of QUANTA, unfortunately. I suppose we should be flattered! LFH \*/

I, probably in common with many others, have invested a great deal of time writing specialised software for my own use, and, for the same reasons as Roy Barber (QUANTA April '86), have been considering a second machine to network with the first. With the uncertain future for the QL this has been shelved. If the proposed 'QLT' will network with my existing QL set-up I am very interested, if not, the Atari 1040 looks increasingly attractive, albeit at possibly a higher price.

E.G. Whitbread,  
5, Bideford Gardens,  
Enfield,  
Middx. EN1 2RP.

/\* As I indicated in the editorial section, both the QLT and the Thor can be networked to QLs. LFH \*/

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Is anyone working on MIDI? I am a musician and very interested in it for the QL.

I am also very interested in "desk top publishing". Is anyone working on something like this?

I am starting to lose patience with the speed which new software is taking to come out on the QL. Why should QL users have to wait any longer than Atari users for a decent selection of software?

I have Miracle Systems 512K RAM board and a Cumana disk interface with one 5 1/4" TEAC drive. It's a great system that has great potential. It was a mistake to put Microdrives in the US version of the QL though. On a machine as sophisticated as the QL they are an insult to the advanced nature of its design. Cute but unprofessional.

Could it be possible for the newsletter to get advanced information about software in progress or about to be released besides languages and utilities? These are of little or no use to me. And a more complete list of the programme library, please! I don't have a list for anything newer than July '85.

Aren't there any other US members who write?

Charles Platt,  
11270, Ryandale Drive,  
Culver City,  
California 90230,  
USA.

Some members may be interested in the fact that the Miracle Systems 512K plus Micro-P (twin unit) work very well. I did have many "lock-ups" with the first 512K unit, but M.S. quickly dispatched a second which works perfectly. The only "complaint" (unavoidable with such memory) is that the QL takes a good while to reset, but with Eidersoft's multi-tasking software, and all PSION or similar software in one icon, the need to reset is minimal.

David McCullagh,  
244, Sundrive Road,  
Dublin 12,  
Ireland.

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About last June you printed part of a letter from me about problems with using a Juki 6100 printer. As a result I heard direct from John Gartshore of Leve, Fife.

I read QUANTA with mixed interest and perplexity: I often go back through earlier ones, understanding (a little) more each time. I wonder whether you realise that many of (most of?) your readers do not understand the TERMS used in the various articles. For example, I have NO IDEA what a toolkit is, nor Lensloks, benchmarks, etc. How about a glossary of common terms?

I should mention that I only use QUILL of the four packages. For anything else, I produce my own SuperBASIC programmes such as for my invoices and VAT returns. My own Christmas Card Address List prints the (140) envelopes as fast as I can feed them into the Juki. Possibly ARCHIVE could do it better, but I have failed on numerous occasions to make it work at all!

Harold Bennett,  
18, The Ridgeway,  
Sanderstead,  
S. Croydon,  
Surrey. CR2 0LF.

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A QL was used for timekeeping in a charity pedal kart race. Seven Spectrums were used for the Safari Rally, and four QLs will be used to register delegates to the International Telecommunications Conference in September.

D. R. Newman,  
Kenyatta University College,  
Appropriate Technology Centre  
for Education and Research,  
PO Box 43844,  
Nairobi, Kenya.

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#### **PROBLEM SECTION**

Has anyone got the April 1985 issue of QL User? I need the article on terminal emulation.

I would like to hear from somebody who has taken a standard UK QL to the US. I am planning such a move with a Philips green screen monitor. I expect the clock will run a bit faster, and the PAL output will be unusable, but what about the monitor output and the Microdrives? Are there other things to watch for?

I would like to get or build a fast (approx. 10 microseconds) analogue - digital converter. The Ferranti ZN448 does what I want, but interfacing is a bit tricky on the QL. I thought of using the ROM port because I am already using the expansion port. Anyone with experience who could hold my hand?

François Lemay,  
6, Hiskins Road,  
Wantage,  
Oxon. OX12 9HJ.

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I want to have a WIMP (Window-Icon-Mouse-Pulldown Menu) package on my QL, and was interested to read the recent review of ICE. While this seems to offer some of the facilities I'm after it can't really claim to be a full WIMP system without multiple overlapping windows and seems expensive when you can get GEM for the IBM PC for under £50.

What happened to the proposed port of GEM to the QL? GEM is almost the ideal package for my needs (although it doesn't multitask) and I'm sure many other users would rush out and buy it if it appeared.

I'm also interested in graphics and want to write my own sprite handling/animation package. The problem is, I don't have enough information on the video or Master chip. To draw something on the screen without flicker you have to update the part of the screen memory you are using while the video circuitry is accessing another part, otherwise the video chip sees an incomplete version of what you are trying to draw, and you see flicker. My last machine was a Commodore 64 and this had a rather neat way of handling this, using a raster register, and a raster interrupt vector. Does the QL's Master chip have anything similar? Help, someone, please?

The QL toolkits include a command to rename a file. Anybody like to reveal how it is done?

Ken Norris,  
51/14, Cockburn Street,  
Edinburgh EH1 1BS.

May I ask the membership if someone can give me advice on two QL matters.

1. The buffer that holds a string input directly from the keyboard fills up a little after two lines of characters. To deal with this problem I have written a line editor in SuperBASIC . This is rather clumsy, although it usually works. Does anyone have a nifty POKE that will enable the buffer capacity to be altered to a much larger value and then reset, during a SuperBASIC programme run?
2. I have problems when ordering fields in ARCHIVE. My Letraset database has a field for type size which I order first; then I order the typeface names. I would expect to have each set of similar names (like "Helvetica Medium") in size order, but this never seems to be the case. I have found the same thing happening in other files I have generated. Have I read the manual incorrectly? Any answers?

John Jarratt,  
4, Honeycroft,  
Welwyn Garden City,  
Herts AL8 6HR.

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I am trying to write a corrupted disk file retrieval programme for the QL (CST Version 1.10 floppy interface). Can anyone answer these questions?

1. Is there a sector header for each floppy sector, as for Microdrive?
2. If so, how do you read these sector headers? Is there an extended Trap #3 routine for this?
3. Is file access controlled completely, via the directory? i.e. via the sector map?
4. If so, what is the general formula for accessing the Nth sector?
5. What is the function of the extended floppy physical definition block? (\$23(base) --> at least \$72(base))?
6. It looks like there are some undocumented vectors at \$12C - \$12X in the JSU ROM. Does anyone know what these do?
7. It looks like the CST controller can take Trap #3 exceptions with D0 = \$4A,\$4B. Does anyone know what these do?
8. What does Trap #1 with D0 = \$24 do? (JSU ROM).



Does anyone know where I can get a copy of the Sinclair Floppy Disk Standard as described in the QDOS Technical Guide, page 130?

Harvey Taylor,  
726, West 17th.,  
Vancouver, BC,  
Canada V5Z 1T9.

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I find ABACUS very useful but the output is untidy, with echoed formulae resulting in long tails of figures or error messages.

Is it possible in cases where all the figures are compatible and no error messages are given, to avoid the tail of figures down the page? This condition arises where a bank statement type of document is used and formulae echoed so that the statement can be continually updated.

F. N. Green,  
Apartado 313,  
Estepona,  
Malaga,  
Spain.

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Is there a company which produces a left hand side unit which duplicates the right hand side, and thus protects extra memory and interface, and makes the machine one solid unit. If there is not, would some company consider same as I am sure that there would be a large demand for it.

David McCullagh,  
244, Sundrive Road,  
Dublin 12,  
Ireland.

#### **Power-supply**

The QL is extremely sensitive to spikes. Even with mains filters you can't get rid of this weakness entirely. I plan to use another power supply - it would be easy, if the QL didn't need a 12 V AC supply. I've found that the 12V AC is not only used to produce the voltage for the RS 232 (+ 12 V and - 12 V). 12 V AC is also connected to the ULA. Is there any damage to be expected, if the ULA doesn't get 12 V AC? Why does the ULA get the 12 V AC?

/\* I'm quite certain that none of the ULAs have an AC input. I checked the circuit diagrams to make sure. In fact, one member powers his "portable" QL from NiCad cells. LFH \*/

### **Second disk-drive**

I've added a 5 1/4" disk drive (TEAC) to my 3 1/2" drive (MEDIC). The TEAC drive is used as drive 2. All is running well. But, if once the system doesn't find a file, the motor of drive 2 continues running. I can stop it only when using a command like "dir flp2\_". After finding a disk, the system will stop the motor. I think I should change the setting of the jumpers - but which?

### **Booting with disk-drive**

Does any member have a patch to stop the Medic system, if you boot a file from mdv? As far as I know, most floppy systems try to find a boot-disk. If they don't get it, they will run for (nearly) ever. (I don't know how long the motor can stand this treatment). The patch can even be in EPROM. I know someone who could burn a modified EPROM for me

### **QUILL and Spooler**

Does anyone know how to use a printer spooler directly from QUILL? The Toolkit 2 spooler is excellent, it copies files from flp to ser as a background task without trouble when you access files from QUILL. But, before you can use this spooler you must print from QUILL to a file, then leave QUILL, start the spooler and, finally, you can restart QUILL. Does any member know a better solution?

### **Fast copy**

The Fast copy programme from the library (the new version is even more useful) doesn't work when I've got Toolkit 2 in memory. What's the reason?

/\* Fast copy uses fname\$ as a variable, which is also a reserved word with the Toolkit. Just change all occurrences of "fname\$" in the Fast copy programme to "fnam\$", say. LFH \*/

### **EPROM programmer**

Has anyone experienced any make? I am thinking of buying one that would enable me to update my QL. "Do it yourself" seems to be the only way to do it. Nine months ago Sinclair Germany offered an upgrade from JM to MGG - but that's like an old fairy-tale; in reality there is no possibility of this.

/\* The QJump programmer is about the best one going, although I haven't used it myself. Can anyone review it? LFH \*/

I would be glad for any answers to my questions.

Wolfgang Göller,  
Rosenstr. 21,  
CH 8105 Regensdorf,  
Switzerland.

Does anyone know of a company that sells something that can hold two or more EPROMs, which allows you to switch between them, without having to disconnect the power and physically change the cartridges?

Ton den Hartog,  
Tienvoet 2,  
3261 TP Oud Beyerland,  
The Netherlands.

/\* I've just seen an advert. for such a device, by  
Cambridge Microelectronics Ltd.,  
1, Milton Rd.,  
Cambridge CB4 1UY.  
It costs £7.96. LEH \*/

## **GAMES REVIEWS**

### **THE WANDERER BY PYRAMIDE (£19.95)**

If what you're expecting is a 3-D version of Elite you'll be more than a little disappointed.

First of all, you'll probably open the video-sized box and read the large manual. Well, apart from being a rather decent novel in its own right I think you'll find it of little use at all.

The graphics, apart from having to wear silly 3-D glasses (red and blue plastic lenses in cardboard frames) are some of the best I've ever seen, but would have been better if they were the standard wire type.

The plot of the game is that your landlady's moggie has been catnapped, so, being the dashing heroic type you've nipped off on your solar powered bicycle (to the next galaxy) to effect the rescue. The cat is being held captive in the heart of the Sphinx and to gain access to this point and save the fateful moggie you must first gain enough abilities (points) or enough cats, cats being the currency (yet more points) of this peculiar galaxy. Either enough cats or a high enough ability level will gain you access to the black holes. To gain points you must act as a travelling croupier to a bunch of poker-playing planets, the best hand being four aces with a joker (the aces are in the black holes). To gain access to the Sphinx you've first got to get from the series of black holes the four aces and so get a high enough ability number or just keep nipping between the ten planets trading off cards. After playing the game for about a month I've never got as far as entering the black holes.

All in all, if you can play poker and if you can stand the cardboard specs you'll like the Wanderer; it's a very inventive programme that only misses being excellent by a very short head. It's the first games programme for the QL that's made use of its graphic capabilities.

Available from:-

Rio Promotions Ltd.,  
28, Waverley Grove,  
London N3 3PX.  
Tel: 01-349 2764

### **KARATE BY EIDERSOFT (£14.95)**

This game has got the best graphics on any home micro I've ever seen: large flicker-free (realistic) sprites and fantastic background scenery. The game in itself is a very reasonable Kung Fu type game but just on the standard of the graphics alone it's worth the purchase price.

The plot is that daddy has sent you to Karate school to learn the ways of the master and on various levels you have to defend yourself with several varieties of punches and kicks against your attackers. Up to the present time a friend of mine has reached level 180 and has not reached the last level yet.

The programmer is one Stephen Kelly (late of PSION, which probably explains the excellent graphics). He is the first programmer in my view ever to master (fully) the capabilities of the QL. I live in hope of another masterpiece from the Kelly/Eidersoft stable.

Available from:-

Eidersoft,  
The Office,  
Hall Farm,  
North Ockendon,  
Upminster,  
Essex RM14 3QH.

David Storton,  
25, Trinity Rise,  
London SW2 2QP.

### **COMPUTER ONE PASCAL REVIEW.**

Computer One Pascal is a very near ISO standard compiler, but don't let the near ISO fool you. The omissions made to the language actually encourage a better standard of Pascal code to be written. The additions are to the I/O ports for the QL, and also 55 procedures and functions specific to the QL. It also contains all of the standard Pascal features. This alone makes it by far the best introduction to Pascal for the QL user. But it is not this alone that makes it special; it is a very powerful pure (PEACHY) compiler unlike many of the other compilers available for the QL!

On booting you are presented with a command screen containing nine options; EDIT, COMPILE, RUN, DIRECTORY, DELETE, COPY, FORMAT, MAKE JOB, and EXIT. Press the EDIT option and this takes you into the editor mode and to the editor menu which also has 9 options plus four special options when editing. When the editor is in memory there is 50 to 55k of free space for file editing on the standard unexpanded QL. When you have written your programme you save it with the suffix pas and it is then ready to be compiled. Leave the editor and go to command mode.

In command mode there is around 70k free space in which to compile etc. The entire system is very easy to use and is very clearly explained in the 100 page user guide, and example listings are supplied with the package.

The user guide takes you through the various stages in easy to follow sequence, ie, syntax, compilation, error checking, file and record handling, machine code extensions and finally on how to make a stand alone EXEC job using MAKE JOB. For instance to compile you press the compile option which prompts for a name (all suffixes are automatic) and a save name which is given the suffix \_qlp. A compile screen appears and begins to compile your programme. If an error is encountered a file with an \_err suffix will be saved. This will contain all error messages and can be rectified with the editor. If the compilation succeeds you may return to the command screen and run the code using the RUN option, first you are prompted for programme name and then data space. To make a JOB you simply select MAKE JOB and follow the prompts for the \_gjp name and the stand alone name which is given the suffix \_exe. It is really that easy!

I find the lack of recognition for this programme completely inexplicable. Metacomco has not got the exclusive rights on compilers as many seem to think. I would gladly hold this compiler up against all others for its compactness, efficiency and performance. In this claim I do not stand alone; for instance, Strathclyde University uses this programme to teach their students efficient Pascal programming!

If you wish to study and use Pascal this is the programme for you! Forget about the compilers that cost twice as much. Computer One Pascal in my opinion is the best both for learning and writing Pascal.

You may have read the Metacomco advert that says "recommended by Sinclair Research". But stop and think why Strathclyde University choose this particular version:

The added bonus to all of this is the friendly help and advice you receive from Computer One, just phone them and they will willingly help you. This is a product of a very high standard and Computer One deserve the recognition that goes with it. Buy it. You won't regret it!

Don Walsh,  
22, Smithergill Court,  
Heelands,  
Milton Keynes MK13 7LT

## REVIEW OF COMPUTER ONE ASSEMBLER

The Computer One Assembler is comprised of an editor and assembler, and a linker. All are Multitasking. Also included are a 32 page user guide and example files. The programme supports conditional assembly and an external reference command for use with the linker. There is also an \$include option to take information from any other files.

The editor when Exec'ed first prompts you for the maximum data space you will need; you are then presented with a 9 option menu, much like the Pascal as mentioned above. This editor is very easy to use and I can recommend it highly. All 68000 mnemonics may be used within your programme plus a number of pseudo-ops. The main ones are; IF, ELSE, ENDIF which are used for conditional assembly. XREF, DREF used for linking programmes on assembly. There is also an \$INCLUDE option which allows the assembler to take input from files other than source files. There is also a facility to assign 10 local variables in label form, ie, @0 to @9 (these are particularly useful when writing large programmes as they take less table space). Once an editing session is over you simply save the file with the suffix \_asm.

The assembler can be Exec'ed alongside the editor if there is enough room left. The assembler simply asks for the file name, your save name, assembly options and display options. The assembly options are as follows; F reads a file either from Microdrive or any other device and saves the code with the suffix cde (Otherwise the whole file is assembled from memory). The J option saves EXEC code with the suffix exe. L saves the code in a special linker format and is given the suffix \_lnk. There are several assembler display formats; ie, screen, printer, Microdrive or none. You may also produce code but no listing by n pressing ENTER. The assembly is extremely fast and all errors are shown on screen, no matter what display option. If errors are found a file of the errors will be saved with an \_err suffix, no code is saved. The err file is then read if the asm file is loaded into the editor for correction, incorporating details of the errors into your text (this is another very useful idea).

When the editor and assembler are both running, you may switch input from the keyboard by pressing CTRL+ C. Of course you may use the linker in a similar fashion.

The Computer One assembler is very fast, much faster than Metacomco's, and is very compact, and as it is an Exec'able job can be called at anytime. It does not have a macro, but I feel it more than makes up for this with the linker and \$include commands. I believe that this is the best assembler for the QL, the fastest and most compact. I would most certainly recommend this assembler above all the others I have seen. This is a powerful easy to use editor/assembler for both the novice and the experienced user.

Don Walsh,  
22, Smithergill Court,  
Heelands,  
Milton Keynes MK13 7LT  
Tel: (0908) 311619

## REVIEW OF COMPUTER ONE MONITOR

The Computer One Monitor comes complete with a 40 page user guide,, the monitor, two example code listings and two demonstration monitor layouts.

This is one of the finest pieces of software that I have come across. It has a multitude of commands and is reasonably easy to use. Having had Hisoft's MONQL for some time I was going to compare the two but this has proved impossible as MONQL is not in the same league.

To begin with the Computer One Monitor has around 41 instructions compared to the meagre amount in MONQL. The Monitor itself is loaded as a job, ie, EXEC'ed and can Multitask with any programme in memory. One very useful feature of this monitor is the help function which displays all of the commands available to you. You are faced with a five window display each of which is assigned to a particular task, but if this does not suit you the display can be easily changed as can the colours. Not only this but you may assign tasks to any channel you wish.

You may at anytime see what job is running, its ID or you may suspend or kill jobs as you wish. You may use any base you wish or indeed convert from one base to another using the eval command (this proves to be very useful in debugging etc). You may alter memory or indeed registers by use of the poke command or for long words the . Command.

The disassembly command is very good and can be used in a variety of formats i.e. nohex to suppress the hex numbers, noasc to suppress the ASCII; this is also true of the dump command. The trace command is a powerful single step function. You may set breakpoints using break and display them to screen using breaks. To test up to the breakpoint you may use the go command and to turn off the break use nobreak. Use regs to display all the registers, find to look for specific commands, move to move memory and compare to verify the move. Possibly the most valuable commands are those to load and save into the monitor. It does this by loading and then resetting the job priority which then suspends the job. There is also a notable function called clone: with this it is possible for instance, to repeatedly execute given commands such as regs so that they update continually on screen, it is a very powerful command and can be used with many command structures. There are so many more functions that I have not described such as suspend, release, kill, priority and queue, suffice to say everything the machine code programmer needs is here!

This is one of the most sophisticated programmes I have seen for the QL, it is a marvel of compactness and power. I think this programme is indispensable to anyone interested in machine code, certainly no other monitor comes close to this one. As an added bonus this monitor runs with Computer One's Assembler. I think it is fair to point out that this programme is written more for the experienced, the newcomer would I believe be better off with a lesser product. An excellent buy especially if you have got Computer One's Assembler!

### **REVIEW OF SUPER ASTROLOGER VERSION 1.6**

Super Astrologer is an expert system for the novice or the experienced Astrologer, it is marketed by DIGITAL PRECISION at the price of £22.45 to QUANTA readers (normally it is £24.99). The programme itself is contained on two Microdrive cartridges as the data is around 210k and a very clear 16 page manual.

I am in the position of being able to review this programme through the eyes of a novice (myself) and a trained Astrologer ( my wife). Firstly I would like to thank Digital Precision for a clear and concise manual which allowed me as a novice to start almost at once. On loading (which incidentally only takes 28 secs) I was confronted with the start screen and a prompt to press the space key to continue. This brought me to an option screen, where if I wished I could do a directory on either drive, or indeed load one of the 22 examples provided. If however I wished to input my own data I just needed to press the space key to do so. This proves to be a relatively easy task as they are prompted for in turn, these are Name, Date, Time of birth, Longitude, Latitude and British Summertime if applicable. This is not as complicated as it sounds all you need is a good Atlas for the Latitude and Longitude, and to refer to the manual for British Summertime.

Once the data is entered and you verify that it is correct, you are presented with some more options, ie; to display in text or graphics etc. Then the decision Radix (the normal wheel), Progressions, or Compare, for the novice choose Radix and press Enter. The calculations are incredibly fast and are directly printed to screen, at this stage you may press "p" for printer (Low Res) or F2 for a screen dump (High Res) or simply press space to carry on. The next display is the Chart, the third display is a graphic display of the aspects, these screens may also be dumped to the printer in the same way. This done you are faced with a menu of options, Display Character Delineation to screen/printer, a display of the Solar System at Birth or the option to Save data. If you use the Character Delineation you are presented with a computer generated interpretation of the chart to screen or printer. If Solar System a map of the heavens from space, in this mode you may tilt, enlarge, shrink the display or/and measure the planet distances. If you choose to Save data you are given an automatic prefix of BD\_, you may store up to 190 BD\_ files to one Microdrive. The most interesting option is the Character Delineation which is unnervingly accurate even on default.



For the more advanced user there is a means of customising your own Character files with the Editor supplied with the package. The manual explains how to do this and it is quite a simple operation especially using the Editor help programme. Also supplied is a Character Editor by means of which you may change the symbols used to suit yourself, this programme also allows you to set your printer for compatibility. Both of these means of customising are very useful to the professional and make this programme a powerful tool.

The Progression and Comparison options are really only of any use to people with a good knowledge of Astrology, note no Character Delineation is given for either option: On screen the Compare option is not at all clear unless printed out. The calculations are very accurate and fast. But I feel to get the best out of this powerful tool you must use a printer.

This is an excellent programme both for the novice and expert, it is easily the best and most powerful Astrology programme for any micro.

Don Walsh,  
22, Smithergill Court,  
Heelands,  
Milton Keynes MK13 7LT  
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#### **"WHEN ERROR" BUG**

I have found a bug in the "WHEN ERROR" routine (MGE ROM), if a function, called with an expression, results in arithmetic overflow. If "WHEN ERROR" is activated, the QL hangs.

A)  $b = \text{SQRT}(X-1)$

If  $X < 1$  and WHEN ERROR is activated, the QL hangs.

B)  $b = (x-1)$ :  $b = \text{SQRT}(b)$

If you replace the expression with a dummy variable, the problem does not occur under any circumstances.

I hope this information is of use to JS and MG users

Jose M Guzman,  
Ramon y Cajal 51,  
41005 Sevilla,  
Spain.

#### **REVIEW OF THE QCON TERMINAL EMULATOR V. 4.**

I have been using the QCON terminal emulator for several months now and I ordered Version 4 as soon as I was notified by QCON. This new version includes Prestel, a VT52 emulator and a QL to QL file transfer utility. You can keep track of your communications in a log file that may be directed to a file or a printer (the printer and modem should be set to the same baud rates). The programme also has a help function and a menu window (by typing <F3>). The PRESTEL and VT52 emulator are the same as the earlier version so I'll tell you something about the new feature, the file transfer.

The file transfer facility allows you not only to send a file (BASIC programme, exec file or data file) to another QL with the ability to select the file name on both sides (your QL and the remote QL), but you can also receive files. This is very useful if you have a QL fitted with disk drives. If you are the lucky owner of an auto answer modem, you can access your files from a remote QL. The file transfer works by transmitting blocks of 1024 bytes with error checking.

All in all I think this is a good piece of software but it could be improved by replacing the VT52 with a more sophisticated VT100 emulator. Note that are able to run the software on a 640K QL and that you do not need the Modaptor(a piece of hardware that allows you a split baud rate) if you have a 300 (or 1200/1200) baud modem.

I am very interested in data communication and if anyone has hints (where to get a VT100 emulator or a review of the TANDATA package) or problems please write to me.

Durbach Marc,  
48, Route de Luxembourg,  
L - 5408 Bous,  
Luxembourg.

#### **MIDI**

In the July '85 issue of QUANTA I wrote a letter asking about the chances of a MIDI (Musical Instrument Digital Interface) port being available for the QL. On the day that QUANTA was delivered to me I received a phone call from Don Forbes asking if I would like a MIDI interface built. At the time he rang I was away and so could not reply, but wrote him a letter about this MIDI interface and how I could not take advantage of his kind offer just yet, due primarily to pressure of work. However I did say that I would contact him when I had the time/money available for this.

Well, the money may still be short, but I now have the time to pursue this further and therefore think that an update on the present position of this idea is in order. In the same issue of QUANTA Leon said that he had experienced some difficulty in getting hold of the specifications. Reading this, I also tried to obtain the specs., but to no avail.

I wrote to many people about this but nobody could help me find them, even the resources of the Devon Library Service had to admit defeat. Therefore I can only assume that perhaps someone more "in the know" about electronics would know who to contact, as I find it hard to believe that the technical specifications of MIDI are totally hidden from public view!

However, I realise that the MIDI port is only half the story, as software is also required to realise its full potential. I wonder if it would be possible to exchange information from the Spectrum with the QL, as I believe that some MIDI ports and software "add-ons" are already available for that machine. This will not be the final answer, I feel, as it seems unlikely that such software will be able to use the various strengths of the QL such as its CPU and mass storage options now available from third party sources.

One item where the QL could score is to act as a Sequencer: this can memorize and play back a pre-determined string of pitch, voltage and timing information. This information can be sent to an instrument which will then be played automatically by "remote control" as it were. Thus they act in a similar fashion to tape recorders but with no distortion or "hiss". More complex sequencers can also record on different tracks, so one person with one synthesizer and one sequencer can record and play a multi-track piece of music that would otherwise require a large band of musicians. The "Catch 22" with this approach has been the cost of the actual solid state memory and associated equipment: not too many years ago synthesizers cost several thousand pounds each, were very complex to operate, and could not talk to one another due to the lack of a MIDI standard. Nowadays they are more powerful and cheaper than they ever were in the past, thus they can be bought and played by many people who before had thought such things were beyond them. Nowadays MIDI can be found on drum kits, guitars and even piano-accordions, so all of these can now play synthesizers, (and computers!), through MIDI.

Whilst synthesizers have plummeted in price, sequencers have stayed expensive, but if you connect a MIDI-equipped computer to fast mass storage you have the makings of a very good sequencer. For example the YAMAHA QX1 can record 80,000 notes on 8 tracks, which is sufficient for about half an hour's music. This has about one megabyte of memory and costs £2,499.00.

A QL that uses a 5MB Winchester hard disk linked to the 512K memory addition and 740k floppy disk drive that used to be "supplied" by Medic at £449.95 would seem to offer a reasonably priced yet powerful alternative to the conventional sequencer, although the software would seem to be the major stumbling block, though this could be overcome eventually, especially at that hardware price.

Whilst Medic appear to be defunct it is possible that such mass storage devices will come down in price, indeed in this month's issue of Practical Computing a 20 Megabyte Winchester is being offered for about £600; if this is not "vapourware" then it promises great things to come. Even with the basic set-up now available on the QL, such as the 512K memory expansion and the two 740K (formatted) disk drives, which appear as the present "ideal" system, this still offers a powerful, low-cost system for such a task.

However what made me write this was your reference to the "Music Synthesizer" that you are working on which is reported in a recent issue of QUANTA. If you could connect this system to a MIDI port then it promises great things, especially as MIDI-equipped instruments are coming down in price, for example, a Casio CT-6000 Keyboard is now about £495, whilst a CZ101 Synthesizer is now £250, with the Clio' having a full MIDI set of modes.

The bugbear has always been the lack of full MIDI information but I think I can now help you with this. You can join the International MIDI Association for \$55 a year, which gets you a "free" 1.0 (latest) spec, a monthly newsletter with all the latest news, and access to a technical support hotline and a MIDI database, their address is:-

The International MIDI Association,  
11857, Hartsook Street,  
North Hollywood,  
California 91607  
U.S.A.  
Tel: (0101) 818-505-8964

They also publish a more comprehensive description of the specs, this is the MIDI 1.0 Detailed Specification Document which runs to 50 pages and include everything you need to know about MIDI plus, no doubt, a few things you don't need to know.

A book called "Synthesizers and Computers" also covers some of the ground, plus general articles on MIDI and digital synthesis techniques. It costs £6.95 from

International Music Publications,  
60-70, Roden Street,  
Ilford,  
Essex IG1 2AQ

Another book which you might find interesting is called "Computer Music Projects" by R. A. Penfold. It costs £2.95 from

Bernard Albania (Publishing) Ltd,  
The Gambians,  
Shepherds Bush Road,  
London, W6 7NF,

and has four main sections, with one each on Analogue Interfacing, Drum Synthesizers, Digital Synthesis and MIDI Interfacing.

It might also be useful to try to make any such interface and software available at a reasonable price, as some that is currently on offer is either very expensive in its own right, such as the J. M. S. Scorewriter for the Commodore 64 that covers Sequencing, Recording and Scorewriting but costs £340, or based on expensive computers such as the Apple Macintosh, Atari ST and Commodore Amiga. Although since the new Spectrum 128 includes a MIDI port this might change.

If such a system becomes available for the QL, whether it runs on the basic QL or not, it might be worth seeing if there is sufficient interest amongst QUANTA members as it might prove an interesting development for the QL.

To change the subject totally, members might be interested to know that the Open University were going to issue Sinclair QLs to students on the new D307 Cognitive Psychology course as a Home Experiment Kit (HEK), but due to the problems Sinclair has had in the micro market this idea has been abandoned; a great pity, as this could have possibly led to the QL becoming the OU home computer, in the same fashion that the Beeb is the BBC's home computer, with associated benefits for software and hardware developers.

However some of the initial inertia of this idea is still coming to light and the new course T363 Computer Aided Design has its present software on the QL, although whether this will be part of the actual course is still not clear at the present time, anyway I have offered to help them test the software for this course in order to locate any bugs in it and so we might have a QL as a Home Experiment Kit after all, though it will not be "the OU Computer".

Stephen Martin,  
30, King Edward Street,  
Barnstaple,  
N. Devon EX32 7BE  
Tel: (0271) 75763

*/\* I was able to get some information on MIDI, and the hardware for the QL is quite simple - basically a Motorola MC6850 ACIA chip and a few other low-cost components. It should be possible to build it oneself for well under £20, and a commercial version would probably be about £40. Some software would also be needed, as Stephen points out. My MC68000 system with the DAC for music synthesis uses the MC6850 and making this MIDI compatible would be quite trivial. LFH \*/*

#### **"BUG" IN METACOMCO QL PASCAL COMPILER**

The "bug" is manifested in arrays of REAL (floating-point) variables when they are included in arithmetic expressions, and is highlighted by the enclosed short programme, which comprises four similar sections. In each, an array element arr[2] is set to 5.0, and is then used in a simple assignment of the form "a:=arr[2]<operator>4.0;", where the operators +, -, \* and / are demonstrated. The value of arr[2], which should be unchanged by the assignment, is printed before and after.

The results were:

```
5.0 9.0
5.0 1.0
5.0 20.0
5.3 1.25
```

In each case the correct value of 5.0 was corrupted by the assignment. Metacomco confirm that this fault exists on all copies of the QL Pascal Compiler, and is not a function of the QL VER\$ or the QDOS version. The "bug" vanishes in this programme if integer variables are used, or if the order of real operands are changed to give "a:=4.0<operator>arr[2];". Metacomco advise that difficulties with more complex arithmetic expressions such as "b:=a[1]\*a[2];" can be avoided by splitting the expression, for example: "t:=a[1]; b:=t\*a[2];". I understand that the problem is associated with a known "bug" within the compiler concerned with internal parameter passing.

Although in principle the "bug" can be avoided by splitting up complex expressions and taking care about the ordering of array variables in expressions, this is a strange restriction for a Pascal compiler that is advertised as ISO Standard. As far as I am aware, ISO Pascal imposes no such restriction, which is quite enough to ensure that existing public domain software will not be portable - the point of the formal Standard.

The usual general advantages of Pascal, and the features that make it popular for scientific, engineering, and educational work, are that it is highly structured (both in terms of software and data) and can be largely self-documenting because of the freedom available in the writing of expressions. This makes the use of arrays common, and REAL arrays are quite normal. If it is necessary to split up complex expressions to persuade an unwilling compiler to function, then the self-documenting advantages are lost. Thus the essential spirit of Pascal is lost, and the compiler in its present form is unfit for the purpose intended and advertised.

Lorraine Meakin of Metacomco has advised me that I am the first user to complain of this particular problem, although she agrees that it is genuine. For this reason she explains that there are no plans to correct this problem for several months. (I gather that the corrective work should only take a few days, although ISO testing is likely to take a further three weeks). I must confess surprise that this is the case, although after publication of this letter in QUANTA other Users may recognise this "bug" as the reason for their own problems, and I would expect the volume of complaints to increase.

My own view is that this "bug" is serious, especially in those markets at which a QL/Pascal combination would be aimed. For this reason I believe it should be fixed quickly, and the revised version issued to all previous purchasers - or at least those that complain. I assume that the same "bug" could well exist in the Atari version, so there seems to be plenty of incentive for early correction.

To be fair, Lorraine Meakin has offered me a free update when possible, or a refund. However, the suggestion that a marketed Pascal compiler is seriously flawed, and will not be fixed for several months, cannot help Metacomco's reputation which is generally regarded as good. Thus it seems to me that it is probably in everyone's interests to ensure that this "ISO Standard" compiler fulfills its promises quickly.

Dr. A. C. L. Lee,  
6, McCarthy Way,  
Wokingham,  
Berkshire RG11 4UA.  
Tel: Eversley (0734) 734118

/\* Derek Budge of Metacomco replied to Dr. Lee, with a copy to me, stating that "the number of our Pascal users who have reported similar problems to your own are infinitesimal". They have revised their upgrade schedules, and the scheduled release date for the upgraded compiler is 30 April 1986. Their other QL products will be upgraded over the next three months. LFH \*/

#### **REVIEW OF THE FIRST MOUSE FOR THE QL.**

The first serious announcement for a mouse for the QL was seen in QL User, December 1985. The astonishing thing was that it was an announcement from a little German company called ABC-Electronic. I ordered the mouse including the interface and two cartridges with special software on 5 December 1985. I received the package on March 5, three months later.

The mouse is the same as the Atari one. It has to be connected through a special interface which is connected to the joystick port and to the ROM connector. This is necessary as the joystick port has no 5V supply.

Two microdrive cartridges were in the package. One is called GIGA-DESK and is dedicated to the mouse. It is something like ICE from Eidersoft but takes about 66k of RAM. It works with icons on the right side of the screen and the list of commands at the top of the screen. You can select both with the mouse. The software works with real windows that you can place anywhere on the screen, magnify, scroll and so on. You can have up to seven windows at the same time. All this works fine with the mouse, but I think it is not as useful as ICE as it really takes too much memory. The large amount of memory needed is also due to the built-in shuffle game and the scientific calculator. They ought to have provided a calendar as with ICE instead of the shuffle game. If you want to execute a programme from one directory, you select it with the mouse. If the file is an executable one, it starts executing otherwise the software asks you to run it (only possible if it is a BASIC programme) or to print or to list it. If it is an executable file GIGA-DESK first checks if there is enough memory left (not likely on an unexpended QL with 66K GIGA-DESK loaded). If there is insufficient memory, GIGA-DESK kills itself and then loads the programme. After execution of the programme you can reload GIGA-DESK with the command DESK but after doing this you are no longer able to load and execute programmes.

The second cartridge, called GIGA-BASIC contains 70 BASIC commands. most of them related to graphics and sprites but also other toolkit commands like job handling from SuperBASIC, a cat command, a hardcopy programme, that works fine with my Brother M1009 printer, and so on. These commands are used to create your own menu-driven software using the mouse. There are commands to find out the position of the mouse, to select menus like the ones from GIGA-DESK, to draw icons and to create sprites. All these are also 2 programmes, the first is called GLOBE GBS and draws the world on the screen (with several possibilities like MERCANT, PLANCHART...) and it is menu and works with the mouse. Another programme is the sprite-editor which seem to me the best one actually on the market.

I ordered the whole package only with the mouse in mind. I wanted to use the mouse with ICE but it doesn't work very well as you have to set the click-length and the speed to maximum and then you need a 2 meter long work bench to travel, at a very slow speed, across the screen.

The character generator advertised by ABC is not supplied with the package, I think it is sold separately. All in all I cannot recommend the package as the software takes too much memory for a small number of useful commands, and the mouse works only with the software provided and not as advertised with all software using function keys or a joystick.

Durbach Marc  
48, Route de Luxembourg,  
L - 5408 Bous,  
Luxembourg.

#### **CAMBRIDGE SUB-GROUP**

Would anyone interested in forming a Cambridge sub-group please get in touch with me on Cambridge 63341.

Steve Smith.

#### **DRK PRODUCTS LTD. "MICRO-RACK"**

I have recently been assessing the value and usefulness of the "Micro-rack", marketed by Messrs. DRK Products Ltd. This product is intended to be used to hold a number of Microdrive cartridges, and to be affixed to the top rear of your QL. It performs this function reasonably well, unless, like me, you like to use a fitted dust cover.

As to the question of value, the "Micro-rack" retails at £4.95, and considering that the device appears to be about 11" of hard plastic sliding door strip with three lengths of double-sided sticky tape and a posh label, this makes the actual Microdrive cartridges at £1.99 to be extremely good value for money!

Howard Bingham-White,  
24, Fulford Drive,  
Links View,  
Northampton. NN2 7NX.



## **STRATHCLYDE PROJECT**

Being somewhat curious as to how the University of Strathclyde was getting on with their project to give students the use of a QL during their course, I rang Richard Kingslake, who is responsible for the exercise.

They now have around 600 QLs in total, with all first year Computer Science students getting one, together with the Computer One Pascal, which they use for most of their course work. Machine language/assembler are taught using a package called "STEAM" (they haven't thought up the words for the acronym yet, apart from Strathclyde for the ST part) which is a "stripped-down" 68000 emulator/assembler/debugger, written in C.

Apparently, students who have some experience of bigger machines (with disk drives) are less satisfied with the Microdrives than those new to computers, who are very happy with them.

Leon Heller

## **REVIEW OF PROSPERO SOFTWARE'S PROFORTRAN**

Prospero Software has always had a very good name for their Pascal and Fortran compilers, so I was very pleased to hear that they were developing versions for the QL. Their Fortran implementation for the QL is the Fortran-77 dialect, which is substantially upwards compatible with the earlier ANSI Fortran-IV, although there might be incompatibility problems with some programmes, which shouldn't be too difficult to get round. Fortran-77 overcomes many of the shortcomings of Fortran-IV, with richer control structures, decent string-handling, etc. Although C seems to be overtaking Fortran for scientific and engineering work, there are still an enormous number of Fortran packages around for CAD, graphics, statistics and the like, which could now be put on the QL.

The software is supplied on three Microdrive cartridges, and comes with a half-inch thick manual, in a very posh blue cloth-covered A5 ring-binder, with a matching slip case. The documentation is superb - very professional, with a good index. Packages of this nature are not really suitable for Microdrive operation on an unexpanded machine, although one can manage quite adequately with a 512K RAM expansion and RAM disk software, without disks. An EPROM cartridge is also provided, and this must be present in the QL ROM cartridge slot when using the package. The EPROM must also be present when running compiled programmes, as it contains some of the run-time support code, but the code in it is also provided in the form of a file, so compiled software may be freely distributed without problems. No run-time licence is required.

I transferred all the files to disk, and was pleased to find that a utility is provided that checks all the files for integrity, by calculating checksums for each file, and comparing them with Values in a data file. This is very reassuring - I wish other companies would do the same. Three example programmes are supplied: prime number generation, maze drawing and a graphics demo that draws random squares all over the screen.

Very good support for the special features of the QL, such as graphics, is provided.

The GST/Sinclair linker is provided, and the compiler is written in such a way that only those routines that are actually required are linked, to create the executable binary programme file. This is not the case with other compilers, such as Metacomco/Lattice C, which result in massive programmes, even if only one function from the library is used, as the whole library is linked. A simple programme to add two integers and print their sum resulted in a file of about 4K - Lattice C would have generated something like 20K, I would think.

The compiler is very professional, with informative error messages, and seems quite fast in operation. Two passes are employed. A large number of options are available when compiling, such as the generation of a Log file, range checking, reporting of undeclared variables, compact code, etc. With the QL Toolkit installed, the compiler may be run in "batch mode", by entering a string of the form:-

```
EX FLP1_F77;" <source>/<options>"
```

A very nice feature is programme "chaining", with a ProFortran programme being able to execute other programmes, with an "option string" being passed, also. Control can be passed back to the parent programme when the child programme terminates. They actually run as separate jobs.

ProFortran is compatible with the forthcoming ProPascal compiler, and Fortran-77 and Pascal modules may be mixed freely (at the relocatable object module level, of course).

Like all Prospero's products, ProFortran was written in ProPascal, by the way.

Similar compilers are available for the Atari ST machines, and the IBM PC, so software developed on the QL could be ported to these other machines quite easily, and vice versa.

Now that a good Fortran compiler is available for the QL, I shall be investigating the possibility of putting John Vince's PICASO graphics package on the QL - this consists of about half a megabyte of Fortran-IV subroutines. I have already ported this package from the large Prime at Middlesex Poly., on which it was developed, to a 64K CP/M system, using Microsoft Fortran, so it shouldn't cause too many problems. Another programme I would be very interested to see on the QL is Bell Labs' INDSCAL multidimensional scaling programme, which normally runs on IBM mainframes. The source code is available from Bell Labs. free of charge to academic institutions. I might be a part-time student this autumn, hence the interest.

Prospero's ProFortran for the QL is an excellent package - I recommend it. Prospero have a very good name for customer support, by the way. I've just heard that Pro Pascal for the QL is now available at the same price as the Fortran. Review in the next issue.

ProFortran is available from:-

Prospero Software Ltd.,  
190, Castlenau,  
London SW13 9DH.  
Tel: 01-741 8531

and the price is £99.95.

Leon Heller

### REVIEW OF MICROAPL QL/APL

APL (it stands for "A Programming Language") is generally regarded as something of a cult language, together with Forth and LISP. It was developed by Dr. Kenneth Iverson, a research mathematician at IBM. Iverson thought up a very concise and powerful form of mathematical notation to help in his research, and realised that it would make a nice programming language. IBM agreed, and it has been available for some years on mainframes from IBM and various other manufacturers. Quite large amounts of memory and a powerful processor are needed to implement APL properly, so it has taken some time to become available on micros. Because APL uses lots of funny symbols, such as Greek characters, the QL, with its programmable font feature, and powerful 68008 processor, is an ideal machine on which to implement the language.

MicroAPL loaned me two versions of their APL for the QL - a standard implementation, using the special symbols, and a keyword version. Having played with a standard version of APL some years ago on a Xerox mainframe, I only tested the "squiggle" version, as MicroAPL call it.

A brief account of the language is probably necessary at this stage. APL is an interpreted language, and, like BASIC, may be used in "direct" mode as a very powerful calculator, or, by defining functions, something like writing programmes in other languages may be employed. An important feature of APL is the workspace, which is an area of memory in which programmes (functions) and data are stored. Workspaces may be saved to disk or Microdrive, and retrieved. APL lets you define a single item of data, a series of items (a vector) or a table of items (an array or matrix). Identical operations may be used on any of these types of data, thus adding all the elements in one table to all the elements in another table is just as easy (for the user, at any rate) as adding two numbers together. I've been told that mainframe DP managers don't like APL very much, as its quite easy for a single user to tie up a large multi-user system, by inverting a 1000 by 1000 matrix, for instance. It can be done with a single line of code, as you will see later on. APL lets you perform some very powerful operations, using what at first sight seem to be some very odd symbols, such as:-

$P$   $\square$   $\triangle$   $\Gamma$   $L$   $\odot$

I've had to put them in by hand, as I don't have an APL printer. They usually cost quite a lot of money, by the way, although I believe that a modified FX-80 isn't too pricey. At Xerox Research we used to use special Diablo daisy-wheel terminals that probably cost about £2,000 each!



It took 1 hour and 15 minutes, which is pretty quick: in a recent issue of Byte was an article written by someone who seemed rather proud of a matrix inversion programme he'd written in BASIC for the IBM PC that took over 14 hours to invert a 60 by 60 matrix! APL does the inversion with the single operator  $\boxed{\square}$ , whereas a BASIC programme to do the inversion would be at least a couple of pages. So the APL programme ran over 10 times faster and took almost no time to write.

QL/APL has its own floating point routines, and 16 digits of precision are available (I think).

APL has some features in common with LISP, in that it is possible to write functions that modify other functions. It might even be possible to write functions that modify themselves, although I am not sure of this - I haven't had time to try it.

Because of the workspace, APL users tend not to make much use of files, and many users will find that Microdrive operation is quite viable. Additional memory will be necessary if you intend to deal with large arrays and tables.

Who needs APL? It is an ideal general purpose language for most users. Once you are familiar with the language, you'll find that you can do some very complex things in a fraction of the time it would take in BASIC, say. Moreover, you will probably find APL much more fun to use than most other languages. APL does demand a different approach than BASIC, so it might take some time to get used to and people new to computing might find things easier than users who already know another language. QL/APL is a superb implementation of the language, and the combination of QL and QL/APL costs less than the APL software alone, on something like the IBM PC. Versions of APL are available for the PC, Atari ST, Amiga, Sage, IBM 43XX, etc., and code developed on the QL should run on any other machine with APL.

Highly recommended!

QL/APL (keyword or squiggle version) costs £99.95 from:-

MicroAPL Ltd.,  
Unit 1F,  
Nine Elms Ind. Estate,  
87, Kirtling Street,  
London SW8 5BP.  
Tel: 01-622 0395

Leon Heller

### REVIEW OF SANDY SUPERQBOARD

Sandy aka Farmintel Ltd. recently loaned me one of their SuperQboards, which I have been using for a few days. It is somewhat similar to the unit made by Medic (or rather, not made by Medic) with a disk interface, 512K RAM, and a parallel printer port, all in a module that only projects about 55mm from the end of the machine.

The RAM circuitry uses the ubiquitous TI 4500 DRAM controller, in conjunction with a PAL for the additional address multiplexor needed by the 256K RAMs. The PAL is presumably used for some other functions as the overall chip count is remarkably small. The usual Western Digital disk controller chip is employed, and one or two drives may be connected. The construction of the unit is superb - very compact and very well laid out. Wherever possible, CMOS chips have been used, minimising the power consumption. Version 1.16 of Tony Tebby's disk software is provided, as well as most of the more useful toolkit functions, a print spooler, and a RAM disk facility. A comprehensive and well-written 35 page A5 manual is provided.

This unit is probably a "best buy" if you need the maximum amount of RAM, running at close to full speed, and a disk interface, in one compact unit. The parallel printer port and toolkit functions are an added bonus.

Prices are:-

with 512K:	£249
without RAM:	£135
with 256K:	£214

256K upgrades are £45 and 512K upgrades are £119. Sandy are at:-

Sandy/Farmintel Ltd.,  
93, Chiltern Avenue,  
Bedford MK41 9EH.  
Tel: (0234) 219814

DS Enterprises are offering a discount on these units (Tel:- 01-671 0209).

Leon Heller

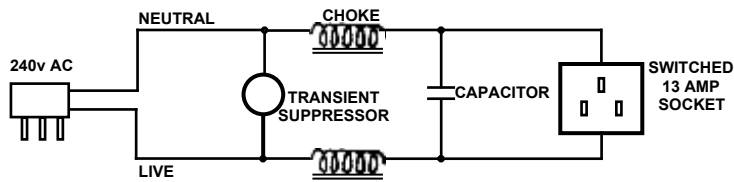
### NEW PRODUCTS

Michael Slatford Software have an "Investment Monitor" that keeps track of your stocks and shares, for £20. They are on 01-688 9489.

SPEM have a new DIY internal RAM expansion which gives a total of 640K. The ULA is removed and plugged into the expansion board, which contains 16 256K RAM chips, and what looks like a PAL, and the board is then plugged into the vacant ULA socket. It should take about 5 minutes to fit. The price is 122,000 Lira (plus 5,000 Lira carriage) from:-

SPEM,  
Via Ponchielli 26/C -  
10154 Torino,  
Italy. SPEM are looking for dealers in the UK.

### DIY MAINS FILTER



<u>Components list</u>	<u>Price</u>
1 transient suppressor (Maplin HW13P)	£0.48
2 chokes (Maplin HW06G) at 38 p each	£0.76
1 capacitor (Maplin FF57M)	£0.47
1 13 A plug	£0.70
1 metre mains cable	£0.30
1 switched 13 A socket	£2.50
Total cost including 50 p & p	£5.31

You can save more money by installing the line filter into an existing extension cable.

Maplin's address is:-  
Maplin Electronic Supplies,  
PO Box 3,  
Rayleigh,  
Essex SS6 2BR.

François Lemay,  
6, Hiskins Road,  
Wantage,  
Oxon. OX12 9HJ.

### USING THE LIBRARY

LIBRARIAN  
Syd Day  
241, Highfield Road,  
Romford RM5 3AW.  
Tel: (0708) 27272

QUALITY CONTROLLER  
Brian Davies  
72, Wharnccliffe Street,  
Hull HU5 3LY.  
Tel: (0482) 43700

U.K. SUB-LIBRARIANS  
(Cartridge & 3 1/2" disk)

Stephen Hewitt,  
Portsmouth Vicarage,  
Portsmouth Hill Road,  
Portsmouth PO6 1BE.  
Tel: (0705) 375360.

Mark Cumming,  
117, Station Road,  
Kings Heath,  
Birmingham B14 7TA.  
Tel: 021-443 4783.

Alex Robertson,  
12, Bude Close,  
Crewe,  
Cheshire CW1 3XG.  
Tel: (0270) 257758.

3 1/2" Disk.  
Jerry Tressman,  
61, Ashdown Road,  
Chandler's Ford,  
Hants, SO5 1QX.  
Tel: (04215) 63129.

5 1/4" 80 track Disk.  
James Methley,  
4, Adamslie Crescent,  
Kirkintilloch,  
Glasgow.  
Tel: 041-776 2938.

OVERSEAS LIBRARIANS

Dennis Coombs,  
(Australia),  
Address to follow

Peter Jones,  
Ave. G. Mullie 6,  
200 Bruxelles.

Ron Dwight,  
Suvikuja 3B14,  
02120 Espoo 12,  
Finland.  
Tel. 90 424 524

Tel: (02) 771 5842

Johan Boman,  
Molndalsvagen 7,  
S-412 63 Gothenburg,  
Sweden.

Wolfgang Goller,  
Rosenstrasse 21,  
CH 8105 Regensdorf,  
Switzerland.  
Tel: 010411 8406315

Kees van der Wal,  
Kwerkerijstraat 22,  
2613 Ve Delft,  
The Netherlands.  
Tel: 31 15 120360

UK members wishing to order library cartridges should send formatted cartridges or disks to cover their requirements together with a self-addressed Jiffy bag stamped with return postage, a cheque made out to IQLUG to cover option payments with a list of the options on the back, and the label from the current QUANTA envelope as proof of membership.

Up-to-date library lists are available from any sub-librarian on disk or cartridge. The list is in the form of two ARCHIVE files on two cartridges, price £1.50 each. The same price applies if you want it on disk - £1.50 per file.

Option charges cannot be paid for by credit charge cards. Most of the library programmes are free and we would expect members to take the complete library cartridge rather than individual programmes, which take much longer to copy over and may be subject to delay. In case of problems it is useful to include your telephone number. A call to the sub-librarian prior to sending your request is recommended as he can then guide you in your choice of programmes and avoid any delays due to holidays or programme availability.



Separate arrangements apply to overseas members and the National sub-librarian should be contacted for details. Members without a national sub-librarian can order cartridges direct from the Head Librarian by adding £2.00 for each cartridge, plus option charges. This will cover the supply of cartridges and postage by surface mail to any destination. Payment should preferably be made by International GIRO transfer direct to the Library Account 35 032 4905. Payment for library programmes cannot be made with credit cards.

### **LIBRARY CORNER**

A list of sub-librarians will be included in each issue of QUANTA from the current issue. Details of the programmes and ordering procedures are held on the library guide cartridges obtainable from any sub-librarian.

The library depends upon submissions from members and whilst a wide range of programmes is covered on the 42 cartridges at present held in the library, we can always accept more. If you have written a programme you think may be useful to other members and are willing to donate it to the library please send it to Brian Davies in the first instance. Brian can usually also provide guidance if you have a programme for submission and it needs a little polishing up before inclusion. The standard we have now achieved owes much to Brian's influence.

Amongst the latest additions to the library is a set of programmes from Ian Jordan (£1.00 option) with an interesting fractals programme, the game of Life, and a couple of other games. Also on the same cartridge are some useful utilities. Mike Finley is writing a Forth compiler for the library which I am assured will not have some of the deficiencies (or the price tag) of commercially available versions.

Overseas members without a National sub-librarian may find it advantageous to have the media supplied and this can be obtained from Jerry Tressman on 3 1/2" disk or myself on Microdrives. The complete library on disk costs £60.00 and on Microdrives £114.00 at present. Both charges include postage and packing by surface mail to any destination. we normally manage to avoid Customs duty on library shipments, but if any are incurred on incoming shipments these have to be passed on. The safest and normally the cheapest method of paying for library programmes in many countries is by direct transfer to the library International GIRO account (35 032 4905) via the Post Office. This service is normally free to GIRO/POSTGIRO/CCP account holders or there is a nominal charge via the the local Post Office. Cheques drawn on British banks are of course acceptable.

Syd Day,  
241, Highfield Road,  
Romford RM5 3AW.  
Tel: (0708) 27272

### REVIEW OF TRANSFORM'S QL SWITCH PROGRAMME

This programme enables the QL to run up to four PSION programmes simultaneously, and allows the user to switch between them "instantly." The author is Andrew Pennell, who has also written several books about the QL.

I ordered the programme from Transform by telephone, and the goods arrived the following morning.

The programme consists of six files on a single Microdrive, taking up a total of 23 sectors. The first three files are boot, boot1 and scode (machine code), which are used by the QL. The remainder are backup ones, and I assume are present in case the originals are corrupted. Unfortunately the manual does not mention them, but they are a good idea. Perhaps other distributors might like to do the same if there is room. The cartridge is not write- or copy-protected.

The "manual" for the software consists of a tiny piece of printed paper, which is inadequate. There should be little difficulty for an experienced QL user, but better documentation ought to be included for the novice. There is no advice to backup the software before use. There is no backup programme, even though ample room exists.

Up to four PSION programmes can be run together, but the manual claims that you need an extra 128K of memory for each. Therefore unless you have a total memory of 640K, you cannot run four. I wonder if this is strictly true? Unfortunately (or fortunately) I only have an extra 512K installed, so I don't know.

It seems to be possible to run more than one copy of ARCHIVE, EASEL or ABACUS, but only one copy of QUILL. If QUILL is run, it must be the last item selected in the menu. Obviously disks are necessary to use the "switch" properly, but you can run two programmes together from two Microdrives. The manual advises disk users to alter the "mdv" statements to "flp" or "fdk", but I simply inserted "flp\_use mdv" at the beginning of the boot programme, as this command is provided by my interface.

How well does the software work? Apart from bugs which I shall describe in a moment it is satisfactory. It takes about 10 seconds to load, and a further 20 seconds to load four PSION programmes and display the first one. Depressing ALT together with a function key switches to another programme in about four seconds. After each programme has been accessed once, subsequent switches take place almost instantly. However if you are carrying out some activity (e.g. printing a document in QUILL), that task has to be completed before ALT+F? will change the programme. When you return to a programme, you do so at the exact spot where you left it.

Unfortunately, if three or four programmes are loaded, problems can occur. The first one shown on the screen is the one switched by F1. If you then key ALT+F4 the fourth will be shown.

Unfortunately keying ALT+F2 or F3 will then have no effect, and the other two programmes are inaccessible. The trick is to key ALT+F2, ALT+F3, etc. to display each programme in order from the time the first one (controlled by F1) appears on the screen. After this, programmes can be switched instantly. This bug seems to be more evident when one of the programmes loaded is QUILL.

On odd occasions the screen keeps being re-drawn after a switch is performed. This happened, for example, when I left one programme whilst accessing a help screen. On returning to that programme, the help screen kept being redrawn, and I could not return to the job in hand.

The manual states that you can only run one QUILL programme, but there appear to be no restrictions on running two or more copies of ABACUS, ARCHIVE or EASEL. A recent advertisement suggested the only programme where two copies could be run was ARCHIVE, though.

For the record I have been using the programme with PSION version 2.3 software, a Miracle Systems 512K EXPANDERAM memory expansion and a Silicon Express disk interface.

The programme costs £14.95 - expensive in view of the size of programme, the bugs and the lack of proper instructions. As far as I know is only available from Transform. Do I recommend it? Well it does work O. K. after a little experimenting, and after taking the precautions I describe it doesn't seem to crash. The real problem though is the lack of proper documentation. Transform Ltd are at:

24, West Oak,  
Beckenham,  
Kent BR23 2EZ.  
Tel:01-658 6350

Alan Mason,  
3, Bransdale Road,  
Nottingham NG11 9JG.

#### **NUMBER THEORY**

Having done computer investigations in number theory, I was challenged by a fellow enthusiast, J. W. Rudge, to test whether the Repunit R23 (1111111111111111111111) is a prime. The American mathematician Dr. D. H. Lehmer claimed to have proved it to be composite in 1929 but other sources state that it is prime. If R23 is composite then its factors will be of the form  $46n+1$ , i.e. 47, 93, etc. I wrote a QL programme to test R23 by division using divisors up to the square root of R23, and found it to be prime, but I still have nagging doubts. Can any QUANTA members throw light on the matter. Incidentally, can anyone tell me what are the benefits of QUILL 2.3?

D. Gold,  
4, Chiltern Close,  
Bushey,  
Herts. WD2 3PZ.

SNICLAIR USER  
**CLASSIC**

★★★★★

## The Wanderer



CULT GAMES are unheard of on the QL, but I've got a feeling that state of affairs is likely to change when The Wanderer hits the screen.

I've seen 3D glasses — but only The initial demo displays with their strange conglomeration of objects floating through space tell of the miracles to come. Bicycles spin past, pentagons twist and turn, and cards float lazily towards infinity.

Press Enter and the space map squares are blank and represent sectors. The other squares represent worlds on which you can play poker for energy and shield power, and gateways into other galaxies.

The plot revolves around some nasty looking moggles — who are on the warpath, destroying everything they find in their path through space. The 3D perspective makes it difficult to destroy them. If you clip only the side of one of their space crafts you might get hit by floating debris, followed by a venomous attack from their laser guns.

If you were hoping for a version of Elite on the QL, The Wanderer falls far short. Although there are many types of flying battle cruiser, including one which looks like a flexi-lamp, complete with domed shade and stand, the planets on the star map do not have their own economies — the ideal is not to trade. You must gamble at the poker tables — like Han Solo in Star Wars — and blow everything out of space.

Despite the lack of sophistication in plot, The Wanderer is the only game worthy of the arcade tag on the QL. The 3D graphics are spectacular and at times you will feel as if you are about to fall into the screen.

The transition between star systems initiated from the star map ridicules those industry pundits who say that if you want fast graphics on the QL, you are flogging a dead horse. When you enter space warp your craft rushes through space. The stars swirl in a vortex and you will feel very, very sick.

Pyramide, a French company, has done wonders with its first product for the British market. Its superb packaging and documentation complement a program which shows its author to be very talented.

John Gilbert

Snclair User, April 1986

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## PYRAMIDE

Attention all  
QL Owners!  
The New Pyramide  
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QL-PEINTRE ..... £14.95  
QL-NUCLEON ..... £19.95  
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V-ROOM ..... £14.95  
MORTVILLE'S MANOR £19.95

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